

Chapter 7

Design Tools

7.1 General Information

Detailed plan notes and/or technical special provisions must be provided by the designer for all items not covered by existing specifications. *Plan notes are not acceptable as a substitute for Technical Special Provisions.* Plan notes are intended to work with the specifications, and are not intended to supersede the specifications. Plan notes must not:

- Change the specifications
- Conflict with the specifications
- Duplicate the specifications

When existing specifications are not applicable, coordinate the specification revisions with the District Specifications Office. Every effort should be made to avoid conflicts, as plan notes are overridden by some specifications and take precedence over others. In either case, plan notes must never conflict with specifications. Details necessary for complete information include:

- Description of item
- Materials
- Construction and installation
- Method of measurement
- Basis of payment

Technical Special Provisions are also known as “Tech Specs” or “TSPs”. For additional information on various types of specifications, refer to the Specifications web page at <http://www.fdot.gov/programmanagement/specs.shtm>

NOTE: Refer to the Plans Preparation Manual (Topic 625-00-006) for additional guidelines on using plan notes. It is located online at <http://www.fdot.gov/roadway/PPMManual/PPM.shtm> Contact the Roadway Design Office with any questions, comments, or corrections regarding these notes.

7.2 Tech Spec or Detail Flags

Several letters or “flags” are used on the Master Pay Item list and Summary of Pay Items to indicate when a Tech Spec and/or Plan detail is **likely needed**. Below is a current list of these flags:

- T= Tech Spec
- P= Plan Details required
- D= Developmental Spec; coordinate with Specifications Office
- M=Maintenance use only
- G= Generic Item; See Chapter 6 for details
- R= Permit required

B= See BOE guidance for additional details.

A= Approvals needed; contact the monitor for approval on each project.

Whenever one of these flags is used, refer to the pay item specific details in the ***Basis of Estimates*** for additional information.

7.3 Choosing between Tech Specs and Plan Details

When trying to decide between Tech Specs and Plan Details, there are several quick questions to consider:

1. What is the **work to be completed**?
2. What are the **material requirements**? What are the testing criteria?
3. How is this to be **installed**? What are the performance requirements?
4. Will the item be **measured** in the field, or paid by plan quantity?
5. What work/materials are included with, or excluded from, this **payment**?

When is a Plan Note sufficient? When the quick questions above are answered by the specifications, a plan note is sufficient. Remember, plan details/drawings show dimensions and location; they alone are not a substitute for complete specifications.

When is a Tech Spec Required? If the above quick questions are not answered by the existing specifications, a tech spec is required. The Designer is responsible for ensuring that all pay items are completely covered within the contract documents (specs, standards, and/or plans).

A complete specification includes:

Description: A Description of the work to be completed may be in the form of a drawing/plan detail, words in a specification, or both.

Material requirements: Materials may be identified in the specifications, design standards, by reference to ASTM or other testing criteria, or by notes in the plans. Consider long-term material requirements, such as UV protection or other coatings.

Construction: Either installation methods or performance requirements may be given. Some products may be installed “in accordance with manufacturer’s instructions.”

Method of Measurement: Describe how the item will be measured, as well as whether it will be paid by plan quantity or field measured. The standard text normally includes the “furnish and install” operation. When working with “install only” items, ensure that the pick-up/delivery instructions are included. For “relocate” items, clearly identify original and final location, as well as clean-up work at the original location and incidental items needed at the final location. “Remove” items should clearly identify whether contractor takes ownership (dispose) or the Department retains ownership (stockpile- within right of way, or delivered to maintenance yard). Additional operations are explained in the **BOE, Chapter 10**.

Special/Custom items should only be used when there is a significant deviation from the standard item of work; existing specs and/or standards do not apply. Complete specifications are needed. Note: Minor changes may be noted in the plans, using standard pay items, as long as conflicts are not created within the contract documents. Coordinate spec changes with the District Specifications Office.

Basis of Payment: Payment is often “full compensation for all work specified” for a complete and accepted installation.

7.4 Plan Details and Pay Item Notes

The Plans Preparation Manual, Vol 2, Chapter 7 addresses the Summary of Quantities in the plans, along with standard pay item notes. When a plan note is necessary, locate it where it is most relevant. For roadway items, this would be on the roadway summary of quantities, along with standard pay item notes. For other component plans, this would be on the summary of quantities sheet(s), or near the item detail/drawing.

From PPM Vol 2, 10.4 (2016 edition):

Project notes are used to clarify design detail, construction practices or method for payment. Project notes should be kept to a minimum. Only those notes that are job specific should be used. Use project notes only to detail uniqueness and not to broaden or curtail requirements in the specifications. Do not use notes that restate the standard specifications or standard indexes. This will help to place proper emphasis on those notes that are job specific and avoid discrepancy of documents.

Refer to the PPM for additional guidance on active voice wording for plan/project notes.

7.5 Plan Quantity Concept

The Plans Preparation Manual (PPM), Vol 1, Chapter 17 addresses Plan Quantity Calculations. The PPM requires that estimated quantities be calculated and documented as accurately as possible. Plan Quantity pay items shall not include contingencies in the quantity calculation.

7.6 Federal Funding

7.6.1 Projects with Federal Funds

When any project with federal funds is let together with a state funded project, also known as “strung projects”, all projects within the contract become “federalized”, i.e. they must comply with all applicable federal laws, rules, and regulations related to the federalized contract. In addition, the Federal-aid project will become the lead project.

Additional details are available in the Plans Preparation Manual (PPM).

7.6.1 Federal Participation at the Pay Item Level

On a project with federal funds, all items will “participate” in the funding, unless specifically noted otherwise. Summarized from FHWA, all items of work, including preventative maintenance, which are intended to extend the useful life of the highway will be eligible for participation in federal funds.

Items of “routine maintenance” are not eligible for participation in federal funds. Examples of “routine maintenance” include litter removal and mowing.

For construction contracts, most items will be loaded into Trnsport as participating. Pay Items specifically noted in the **Basis of Estimates (BOE)** as “non-participating” will default to “non-participating”. Do not change the participating/non-participating field, unless specifically instructed by the District Estimates Office.

Chapter 7 Revision History

8-12-16: Added PPM reference to 7.4 for active voice wording.

5-9-16: Updated 7.2 to include B value.

2-1-16: Updated header dates for 2016 edition. Updated PPM reference in 7.4.

12-30-14: Updated header dates for 2015 edition. Added third paragraph to 7.1 to define Tech Specs and refer to specs web page. Corrected missing text from last sentence of 7.6.1.

5-14-14: Updated 7.2 to include developmental specs.

1-14-14: Updated header dates for 2014 edition. Updated “Spec Type” flag list. Included Quick Reference information into section 7.3. Updated hyperlink.

2-20-13: Updated header dates for 2013 edition.

12-30-11: Added 7.5 to include Plan Quantity information, per Estimates Bulletin 11-06.

11-23-11: Updated header dates for 2012 edition.

10-17-11: Added 7.4 to detail pay item notes, along with PPM guidance.

4-21-11: Updated header date. Moved text from “Quick Reference” to new section 7.3. The “Quick Reference” content will also be available as a separate file online.

11-23-10: Updated header dates for 2011 edition. Added color to “Quick Reference” page.

5-14-10: Updated “Quick Reference” page.

10-30-09: Updated header dates for 2010 edition.

9-16-09: Changed chapter title from Plan Notes to Design Tools. Added section for Tech Spec and other flags. Added “Quick Reference” page.

10-1-08: Updated header dates for 2009 edition.

5-28-08: Deleted notes; refer to PPM for current information for: Key Sheet Notes, Typical Section Notes, Summary of Quantities Sheet Notes, Plan and Profile Sheet Notes, Pay Item Footnotes, Drainage Map Notes, and Utility Adjustment Sheet Notes.